What is claimed is:

Claim 1. A method comprising:

etching a source region and a drain region in a silicon substrate wherein the etching has an undercut profile;

depositing a silicon germanium alloy in the source region and in the drain region;

depositing nickel on the silicon germanium alloy;

forming a nickel silicon germanium silicide layer wherein the nickel silicon germanium silicide layer is self-aligned.

Claim 2. The method of claim 1 wherein the source region and the drain region extend laterally beneath an insulating layer.

Claim 3. The method of claim 2 wherein the source region and the drain region extend laterally beneath a gate region.

Claim 4. The method of claim 3 wherein the source region and the drain region extend laterally beneath the gate region between 25 and 200 angstroms.

Claim 5. The method of claim 1 wherein the source region and the drain region have a vertical depth between 100 and 1500 angstroms beneath the surface of the silicon substrate.

Claim 6. The method of claim 1 wherein the etching is dry SF_6-based.

Claim 7. The method of claim 1 wherein the silicon germanium alloy has a germanium composition between 5% and 50%.

Claim 8. The method of claim 7 wherein the silicon germanium alloy has a germanium composition between 10% and 40%.

Claim 9. The method of claim 8 wherein the silicon germanium alloy has a germanium composition between 15% and 30%.

Claim 10. The method of claim 1 wherein the deposition of the silicon germanium alloy is vapor phase epitaxy.

Claim 11. The method of claim 1 wherein the deposition of the silicon germanium alloy is reduced pressure chemical vapor deposition.

Claim 12. The method of claim 1 wherein the deposition of the silicon germanium alloy is atmospheric chemical vapor deposition.

Claim 13. The method of claim 1 wherein the deposition of the silicon germanium alloy is ultra high vacuum chemical vapor deposition.

Claim 14. The method of claim 1, depositing the silicon germanium alloy further comprising doping the alloy.

Claim 15. The method of claim 14 wherein the doping is in situ during depositing the silicon germanium alloy.

Claim 16. The method of claim 15 wherein a dopant is boron.

Claim 17. The method of claim 16 wherein a source of the dopant is B_2H_6.

Claim 18. The method of claim 16 wherein the boron has a doping concentration level between $1*10^{18}$ /cm^3 and $3*10^{21}$ /cm^3.

Claim 19. The method of claim 18 wherein the doping concentration level is $1*10^{21}$ /cm^3.

Claim 20. The method of claim 1 wherein the nickel has a thickness between 50 and 200 angstroms.

Claim 21. The method of claim 1, forming the nickel silicon germanium silicide layer further comprising:

annealing the substrate at a temperature between 325°C and 450°C for less than or equal to 60 seconds;

removing excess nickel with a wet etch chemistry of hot H_2O_2 and H_2SO_4; and

annealing the substrate at a temperature between 400°C and 550°

Claim 22. An transistor comprising:

a gate region;

an insulator region beneath the gate region;

a source region adjacent to the oxide region;

a drain region adjacent to the oxide region;

wherein the source region and the drain region include a silicon germanium alloy and a nickel silicon germanium silicide layer.

Claim 23. The method of claim 22 wherein the source region and the drain region extend laterally beneath the insulating layer.

Claim 24. The method of claim 23 wherein the source region and the drain region extend laterally beneath a gate region.

Claim 25. The method of claim 24 wherein the source region and the drain region extend laterally beneath the gate region between 25 and 200 angstroms.

Claim 26. The method of claim 22 wherein the source region and the drain region have a vertical depth between 100 and 1500 angstroms beneath the surface of the silicon substrate.

Claim 27. The transistor of claim 22 wherein the silicon germanium alloy has a germanium composition between 5% and 50%.

Claim 28. The transistor of claim 27 wherein the silicon germanium alloy has a germanium composition between 10% and 40%.

Claim 29. The transistor of claim 28 wherein the silicon germanium alloy has a germanium composition between 15% and 30%.

Claim 30. The transistor of claim 22 wherein the silicon germanium alloy is doped.

Claim 31. The transistor of claim 30 wherein the silicon germanium is doped in situ during a deposition of the silicon germanium alloy.

Claim 32. The transistor of claim 31 wherein a dopant is boron.

Claim 33. The transistor of claim 32 wherein a source of the dopant is B_2H_6.

Claim 34. The method of claim 32 wherein the boron has a doping concentration level between $1*10^{18}$ /cm^3 and $3*10^{21}$ /cm^3.

Claim 35. The method of claim 34 wherein the doping concentration level is $1*10^{21}$ /cm^3.

Claim 36. The transistor of claim 22 wherein the nickel silicon germanium silicide layer is self-aligned.

Claim 37. A method comprising:

etching a source region and a drain region in a silicon substrate wherein the etching has an undercut profile;

depositing a silicon germanium alloy in the source region and in the drain region wherin the silicon germanium alloy has a germanium composition between 15% and 30%;

doping the silicon germanium alloy in situ with boron wherein the boron has a doping concentration level of $1*10^{21}/cm^3$;

depositing nickel on the silicon germanium alloy;

annealing the substrate at a temperature between 325°C and 450°C for less than or equal to 60 seconds;

removing excess nickel with a wet etch chemistry of hot H_2O_2 and H_2SO_4; and

annealing the substrate at a temperature between 400°C and 550°.

Claim 38. The method of claim 37 wherein the source region and the drain region extend laterally beneath an insulating layer.

Claim 39. The method of claim 38 wherein the source region and the drain region extend laterally beneath a gate region.

Claim 40. The method of claim 39 wherein the source region and the drain region extend laterally beneath the gate region between 25 and 200 angstroms.

Claim 41. The method of claim 37 wherein the source region and the drain region have a vertical depth between 100 and 1500 angstroms beneath the surface of the silicon substrate.

Claim 42. The method of claim 37 wherein the etching is dry SF_6-based.

Claim 43. The method of claim 37 wherein the deposition of the silicon germanium alloy is vapor phase epitaxy.

Claim 44. The method of claim 37 wherein the deposition of the silicon germanium alloy is reduced pressure chemical vapor deposition.

Claim 45. The method of claim 37 wherein the deposition of the silicon germanium alloy is atmospheric chemical vapor deposition.

Claim 46. The method of claim 37 wherein the deposition of the silicon germanium alloy is ultra high vacuum chemical vapor deposition.